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Alexander

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[54] **SPACIAL ORGANIZER FOR PAPERS**

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[73] Assignee: **Haworth, Inc.**, Holland, Mich.

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[51] **Int. Cl.**[6] **A47F 5/00**

[52] **U.S. Cl.** **211/55**; 211/10; 40/124

[58] **Field of Search** 211/55, 50, 10; 106/32.5; 40/124

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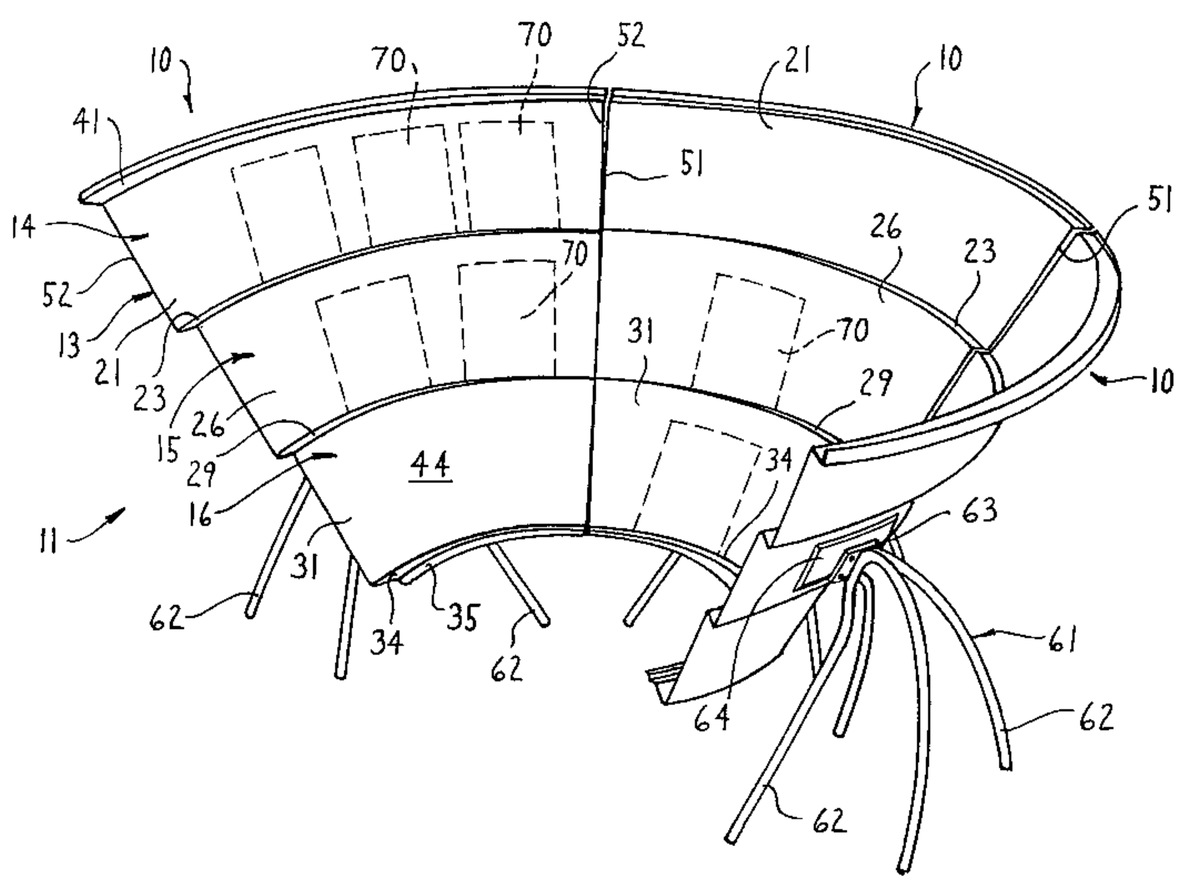
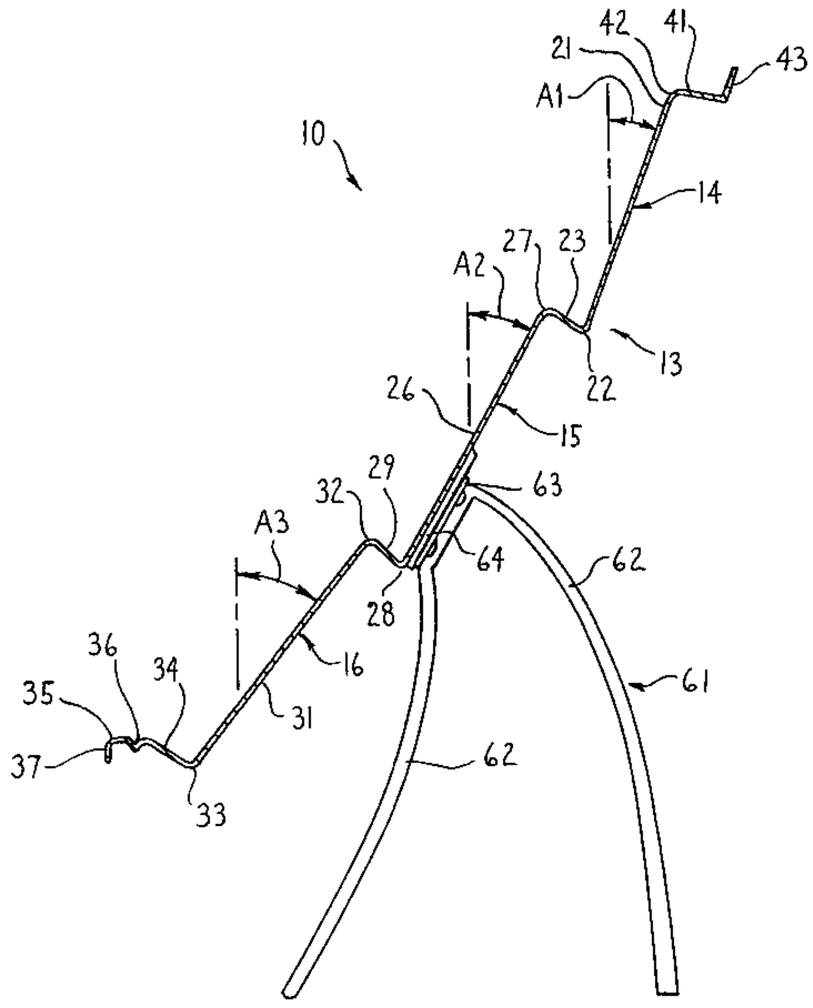
Attorney, Agent, or Firm—Flynn, Thiel, Boutell, & Tanis, P.C.

[57] **ABSTRACT**

A spacial work organizer comprising an upright support arrangement having a generally vertically and horizontally stepped configuration defining a series of generally L-shaped support trays which are disposed in vertically adjoined but horizontally staggered relationship. The support arrangement is preferably of a horizontally concavely curved configuration, whereby a worker can readily position a plurality of documents such as papers and the like on the various vertically spaced trays, with several such documents being disposed in self-supporting relation on each level or tray.

17 Claims, 4 Drawing Sheets





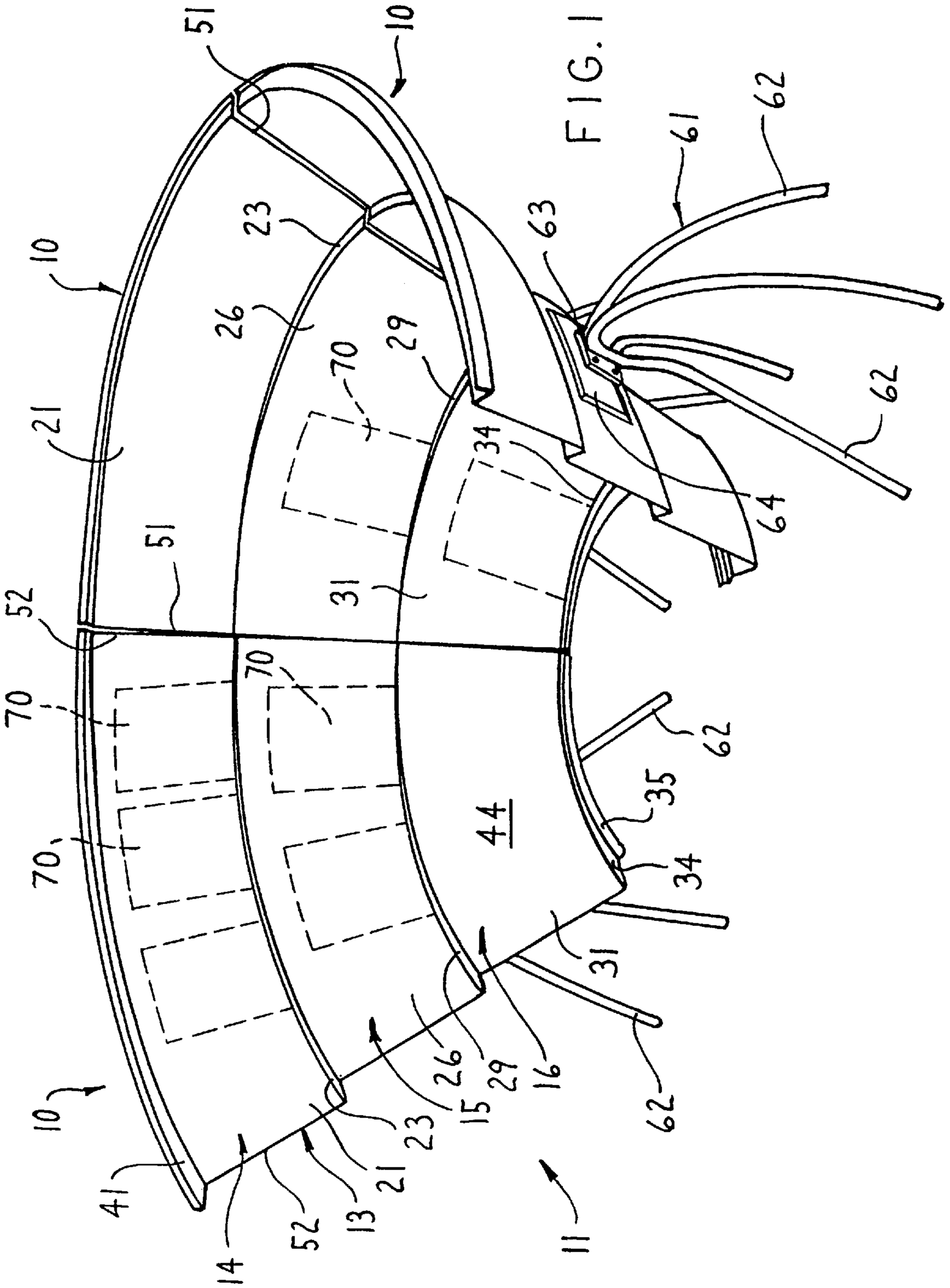

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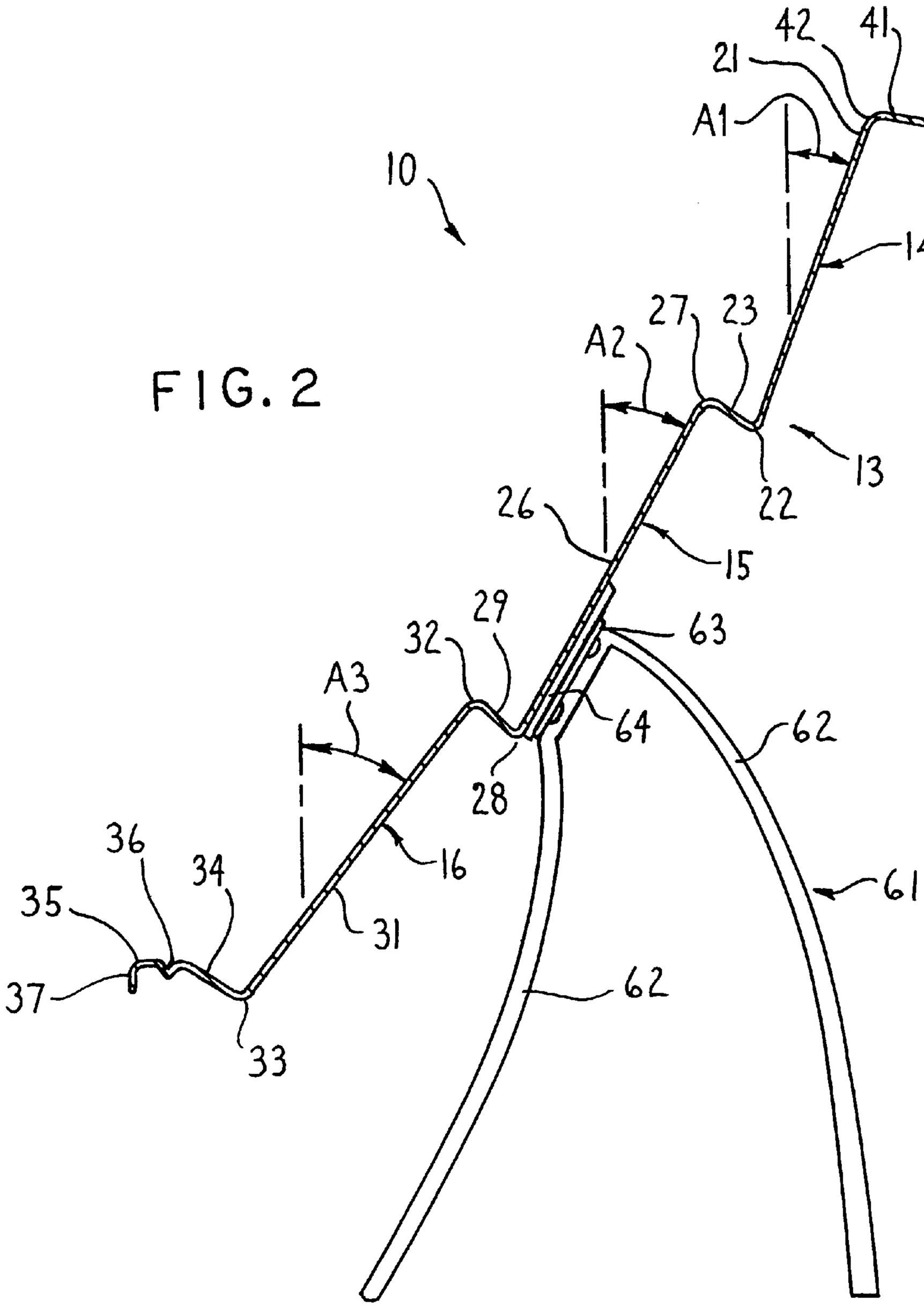
FIG. 1

FIG. 2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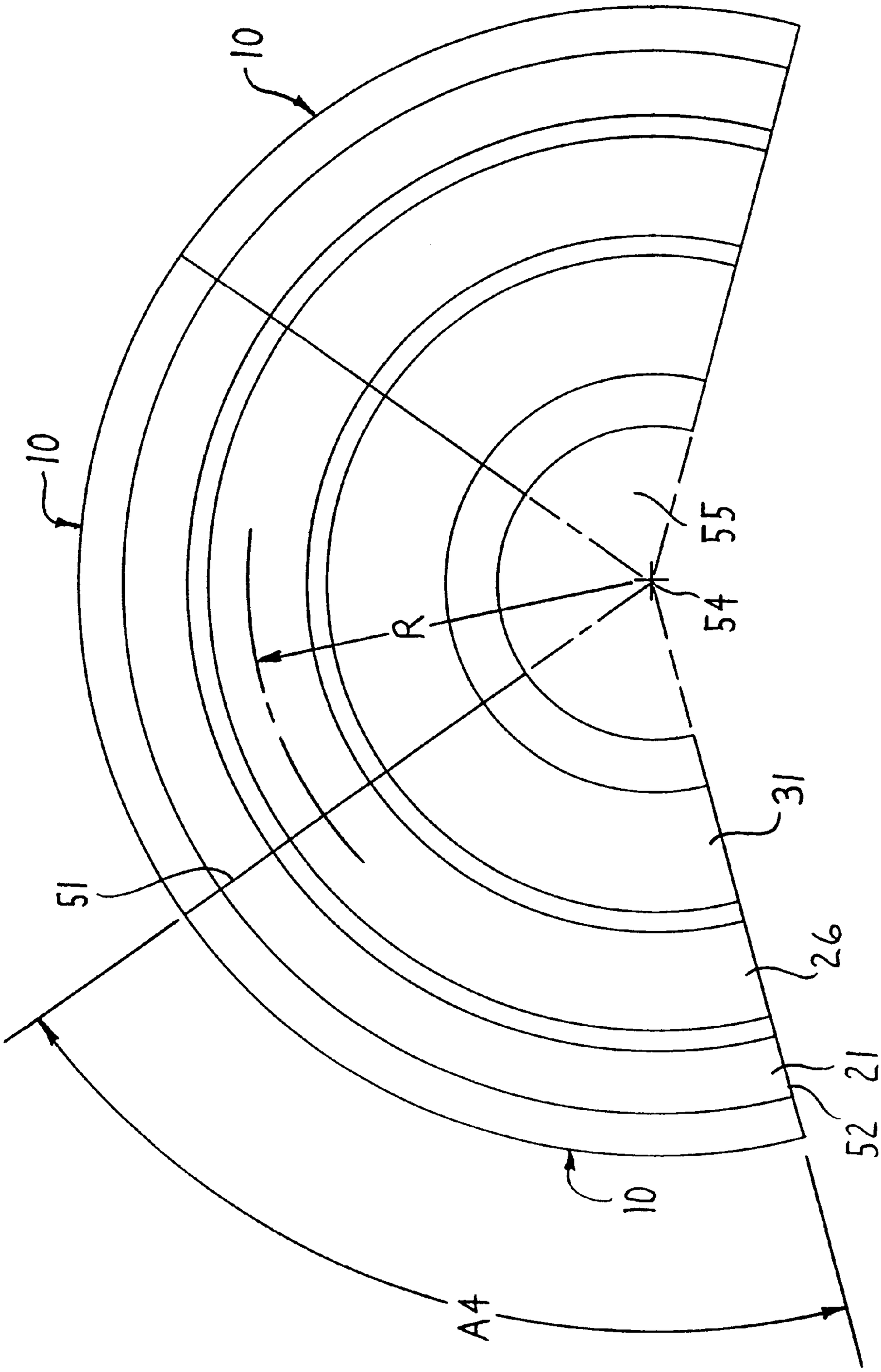

FIG. 3

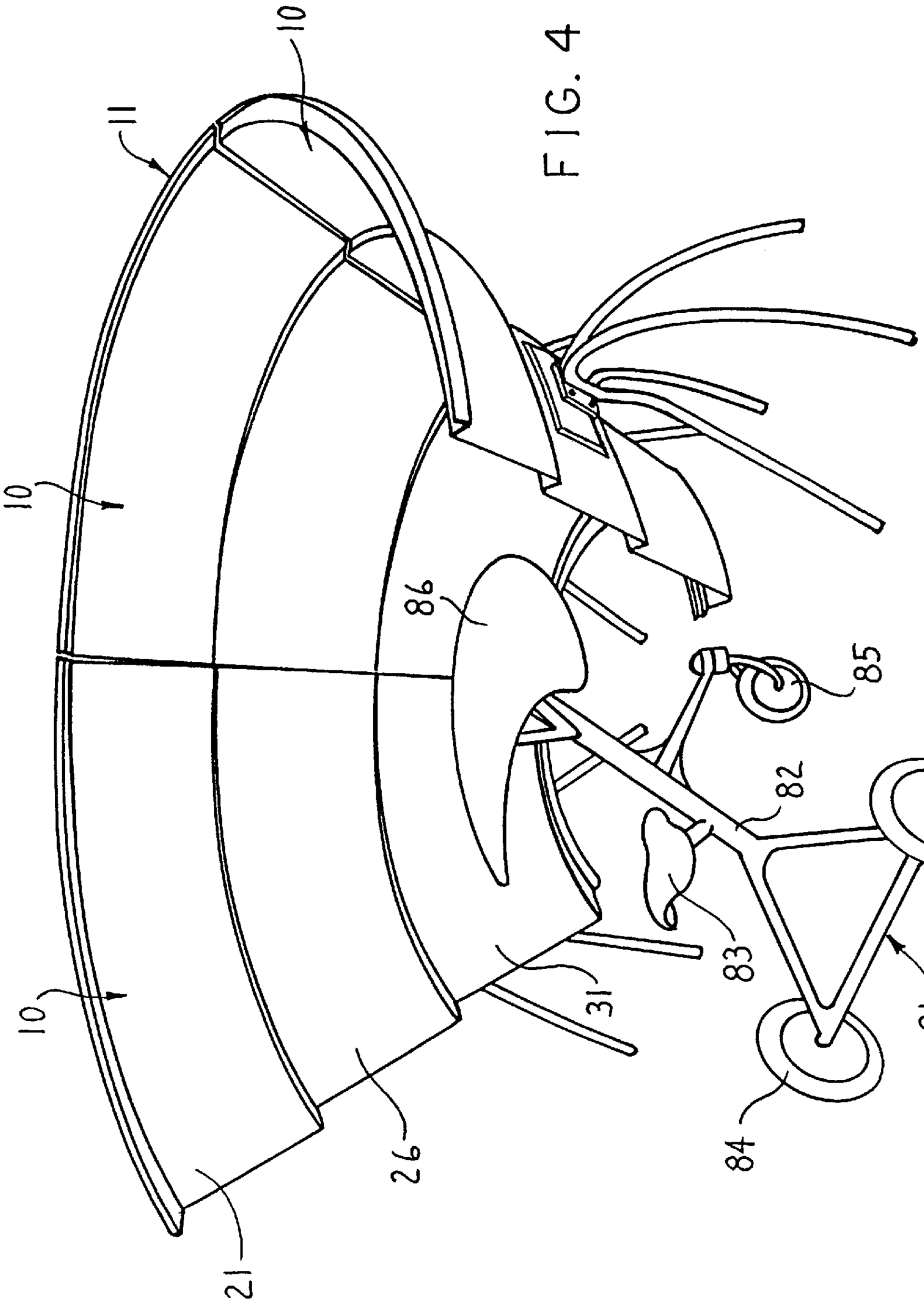

FIG. 4

SPACIAL ORGANIZER FOR PAPERS

This application is a 371 of PCT/US97/10572 Jun. 05, 1997, and claims Provisional Application No. 60/019,425 filed Jun. 07, 1996

FIELD OF THE INVENTION

This invention relates to a spacial organizer structure intended for use in an office-type environment for providing increased surface display area, both vertically and horizontally to facilitate both display of and access to a large number of documents, such as papers, to facilitate work in progress by a worker.

BACKGROUND OF THE INVENTION

Most offices provide conventional work surfaces such as tables and desks for supporting papers and-the like. However, with the ever-increasing volume of papers which are affiliated with most jobs, many workers find it difficult to manage or control work-in-progress due to the limited workspace (i.e., table or desk top space) available. More specifically, the worker is often unable to successfully spread out and display a large number of papers or documents.

This invention relates to a spacial organizer which provides for greatly increased surface support area for permitting display and organizational arrangement of numerous documents. More specifically, the spacial arrangement of this invention, within a compact arrangement which more effectively utilizes vertical space, is able to provide greatly increased support and display area for documents and the like, particularly in contrast to conventional desk and table tops, so as to permit a worker to more efficiently perform his tasks.

The work organizer of this invention comprises an upright support arrangement having a generally vertically and horizontally stepped configuration defining a series of generally L-shaped support trays which are disposed in vertically adjoined but horizontally staggered relationship. The overall support tray structure is preferably of a horizontally concavely curved configuration, whereby a worker can readily position a plurality of documents such as papers and the like on the various vertically spaced trays, with several such documents being disposed in self-supporting relation on each level or tray. Several arcuate tray structures can be positioned generally edge to edge to define a greater arcuate configuration, such as a semi-circle, whereupon a worker standing or seated within and partially surrounded by the tray arrangement can readily see, access and organize a large number of documents positioned on the tray arrangement.

Other objects and purposes of the invention will be apparent upon reading the following specification and inspecting the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view of a spacial organizer for papers according to the present invention, which organizer as illustrated in FIG. **1** includes three arcuate sections positioned generally edge to edge.

FIG. **2** is a vertical cross-sectional view taken through one of the spacial organizer sections of FIG. **1**.

FIG. **3** is a diagrammatic plan view which illustrates the spacial organizer of FIG. **1**, the supporting leg structure being eliminated for clarity of illustration.

FIG. **4** is a view corresponding to FIG. **1** but illustrating a mobile worker support used in conjunction with the spacial organizer.

Certain terminology will be used in the following description for convenience in reference only, and will not be limiting. For example, the words "upwardly", "downwardly", "rightwardly" and "leftwardly" will refer to directions in the drawings to which reference is made. The words "inwardly" and "outwardly" will refer to directions toward and away from, respectively, the geometric center of the apparatus and designated parts thereof. Said terminology will include the words specifically mentioned, derivatives thereof, and words of similar import.

DETAILED DESCRIPTION

Referring to FIGS. **1–3**, there is illustrated a spacial paper organizer **10** according to the present invention. FIGS. **1** and **3** illustrate three such organizers **10** disposed generally in edge-to-edge relationship so as to define an organizer assembly **11** of increased arcuate extent. It will be appreciated, that the size of each organizer **10** and the number used together, is a matter of choice and size selection, and hence the following description will relate solely to a single organizer **10** since it will be appreciated that a single organizer **10** can be utilized by itself, and in fact a larger organizer could also be constructed as a single assembly if desired, although use of plural smaller organizers positioned in adjacent relationship is preferred both from a manufacturing and a storage standpoint.

The paper organizer **10** as shown in FIG. **2** includes a generally stepped upright paper support **13** which defines a generally L-shaped upper tray or shelf **14** which is vertically joined to an L-shaped middle or intermediate shelf **15**, and the latter in turn is vertically joined to a generally L-shaped lower shelf **16**. These three shelves **14–16**, due to their shape and orientation, are also horizontally offset relative to one another as illustrated by FIG. **2**, whereby the upright support **13** when viewed in vertical cross-section has a generally vertically stepped configuration.

The L-shaped upper tray or shelf **14** includes a generally upright wall **21** which projects dominantly upwardly but which is also slightly sloped rearwardly relative to the vertical at an angle Al as it projects upwardly. This generally planar upright wall **21**, at its lower end, is joined through an integral rounded corner **22** to a bottom wall **23** which projects transversely away from the front side of the upright wall **21**. This bottom wall **23** is also at least slightly upwardly sloped as it projects away from the front side of the upright wall **21**, and preferably these walls **21** and **23** at their juncture define an angle therebetween which is preferably slightly less than 90°. This relationship facilitates the upright support of a paper, such as indicated at **70** in FIG. **1**, on the shelf since the paper will lean rearwardly against the upright wall **21** and the lower edge of the paper will engage and be supported on the bottom wall or shelf **23**. The angular relationship between these walls **21** and **23** assists in maintaining the paper in an upright display position, and assists in preventing the paper from slipping downwardly off of the support shelf.

The L-shaped middle shelf or tray **15** is similarly constructed in that it includes an upright wall **26** which, as it projects upwardly, is also rearwardly sloped at an angle A2 relative to the vertical. This upright wall **26** at its upper edge is joined through an integral rounded corner **27** to the front edge of the bottom wall **23** associated with the upper shelf. The planar upright wall **26**, at its lower end, is joined through an integral rounded corner **28** to a generally planar bottom shelf **29**, the latter projecting transversely outwardly away from the front face of the upright wall **26**. The included

angle between the walls **26** and **29** is also preferably slightly less than 90°, as explained above relative to the top shelf.

Lastly, the L-shaped lower shelf **16** is also similarly constructed in that it includes an upright wall **31** which, as it projects upwardly, is also significantly rearwardly sloped at an angle **A3** relative to the vertical. The upper end of this planar upright wall **31** is joined through an integral corner **32** to the outer edge of the bottom wall **29** associated with the intermediate shelf **15**. The lower edge of upright wall **31** is joined through a rounded integral corner **33** to a bottom wall **34**, the latter projecting transversely from the front face of the upright wall **31**. In this case, the bottom wall **34** projects approximately perpendicularly away from the upright wall **31** since the increased rearward slope of the upright wall **31** permits use of a substantially right angle at the corner **33** without interfering with proper support of papers on the lower shelf.

In the shelves **14–16** as described above, each of the planar upright walls has a length as measured between upper and lower edges thereof which is significantly greater than the length (i.e., width) of the respective bottom wall as measured between the front and rear edges thereof. For example, the upright walls **21**, **26** and **31** preferably have a length in the order of at least about 14 inches so as to readily accommodate thereon all conventional paper sizes, whereas the bottom walls or trays **23**, **29** and **34** will typically be only 2 to 3 inches wide.

In addition, the angle **A3** will significantly exceed the angle **A2** and the latter in turn will exceed the angle **A1**. This thus results in each of the upright walls, starting with the lower upright wall **31** and progressing up to the upper upright wall **21**, being of increased slope (relative to the horizontal) as the L-shaped shelves progressively step upwardly. This varying sloped relationship between the different shelves facilitates both visibility and access to the papers stored thereon when the organizer is being used by a worker.

The paper support **13** is, in the illustrated embodiment, also provided with a generally horizontal flange **35** which joins to the front edge of the bottom wall **34** and projects horizontally therefrom through a small extent. This horizontal flange **35** preferably defines therein a groove or channel **36** which extends longitudinally along the flange. This groove **36** functions to retain erasable marking pens and the like. The front edge of horizontal flange **35** in turn is joined to a downward flange **37**, the latter functioning to provide additional strength and reinforcement.

The stepped paper support **13** is also provided with a top flange **41** which is joined through a rounded corner **42** to the upper edge of the upright wall **21**. This top flange **41** projects generally horizontally rearwardly away from the upright wall **21** through a small extent, and flange **41** at its rear edge terminates in an upwardly projecting flange **43**, the latter functioning as a retaining rim and providing additional strength and reinforcement. The top flange **41** preferably slightly downwardly slopes as it projects rearwardly, whereby this flange and its cooperation with the rear flange **43** functions as a storage shelf for marking pens, erasers and the like.

The stepped paper support **13** is preferably formed from a thin material, such as structural plastics or fiberglass, so that the support **13** can be integrally formed in one piece while still possessing the necessary strength and rigidity. This thus results in the stepped support **13** having a thin plate like construction to simplify both the size and weight thereof. Further, the selected material, namely plastics or fiberglass or equivalent, preferably provide the entire support **13** with a front surface **44** which is suitable for use with erasable marking pens so that, in addition to supporting papers, the worker can also utilize the front surface **44** for writing or sketching by use of conventional erasable soft-tipped marking pens, which writing or sketching can be thereafter be easily erased.

The stepped paper support **13** extends between side edges **51** and **52**, which side edges are preferably defined by and disposed within vertical planes.

The stepped support **13** is preferably formed so as to have an arcuate configuration generated on a radius about a vertical centerline, such centerline being indicated at **54** in FIG. **3**. By generating the stepped support **13** on a radius about a centerline such as indicated at **54**, this thus results in each of the upper, intermediate and lower trays or shelves being effectively generated about the same vertical centerline. This results in the stepped shelf **13** having an arcuate configuration when viewed in plan view, and this configuration in conjunction with the stepped and varying sloped relationship of the vertically spaced support shelves facilitates convenient access to the various shelves and various locations along the individual shelves. For example, organizers **10** are disposed in adjacent relationship so as to define an arcuate assembly as illustrated by FIGS. **1** and **3**. The worker can stand or sit in the open region **55** defined by the plurality of organizers **10**, and due to the fact that these organizers **10** are generated about the vertical centerline **54** as defined within this region **55**, and the fact that the shelves are generated on an average radius R, which radius extends to the intermediate shelf section and represents a convenient reaching distance for the worker, this enables the worker to readily access all regions of the upper, intermediate and lower shelves without requiring the worker to undergo significant movement of the entire body.

To enable the plurality of organizers **10** to be positioned edge to edge and define an arcuate arrangement as illustrated by FIGS. **1** and **3**, the edges **51** and **52** of each organizer **10** are defined within vertical planes which in effect substantially pass through the vertical centerline **54**, and this necessarily results in each organizer **10** at its upper edge having a greater radius and hence a greater circumferential extent than at the lower edge thereof.

Each organizer **10** is preferably provided with a suitable support or leg structure **61** for permitting the organizer to be supported on a floor in a desired upwardly spaced relationship. In the illustrated embodiment, the leg structure **61** includes a plurality of upright legs **62** which engage the floor and, at their upper ends, are joined to a mounting bracket or plate **63**. The latter overlaps and is secured to a reinforcing or thickened portion **66** provided on the rear side of the intermediate upright wall **26**. Suitable fasteners such as screws or the like can be provided for securing the bracket to the upright support.

It will be appreciated that, if necessary or desired, the support bracket can include upwardly and downwardly projecting legs for engaging and supporting the rear of the upper and lower upright walls **21** and **31** if desired. In addition, it will be appreciated that the leg structure **61** can be attached to the upright support **13** by any type of conventional detachable bracket structure so as to facilitate removal of the leg structure if desired, thereby permitting convenient stacked storage of a plurality of stepped supports **13**.

In the paper support assembly **11** illustrated by FIGS. **1** and **3**, each support **10** extends through an angle of about

70°, and the three illustrated organizers **10** when assembled in a continuous arcuate relationship hence extend through an angle of about 210°. This represents about the maximum angle which can be continuously defined and utilized without requiring significant turning of the user so as to make effective use of the assembly. It will be appreciated, however, that even a single assembly can be effectively utilized, and that the arcuate extent of the assembly can obviously be varied depending upon the desired working conditions and relationships. Further, a single organizer **10** is believed particularly suitable for use in a corner of an office since such organizer will readily fit within a corner and permit efficient and effective utilization of space which otherwise is often not effectively usable. It will be further recognized that the paper organizer can also be provided with a horizontally straight configuration, rather than an arcuate configuration as illustrated and described above, although the arcuate configuration is highly preferred since such greatly increases the overall flexibility and convenience of use as is believed apparent from the above description.

Referencing now FIG. **4**, there is illustrated an assembly of organizers **10** corresponding to that illustrated in FIG. **1**, and thus further description of the assembly **11** will not be presented. In FIG. **4**, however, the assembly **11** is being used in conjunction with a mobile worker support **81** which includes a frame **82** provided with a seat **83** for a worker. The frame is of a generally tripod construction in that it provides a three-wheeled support, namely it mounts thereon two coaxially aligned rear wheels **84** and a front wheel or caster **85**. The frame at its front is provided with a tray or shelf **86** which is positioned forwardly of the seat so that the worker can sit on the seat **83** and position his arms or other papers on the tray **86**. The worker, when seated on the seat **83**, will effectively straddle the frame so that both feet engage the floor. The worker then uses his feet to selectively move and position the support **81** due to the provision of the front caster **85**, whereby the worker can thus be seated and have mobility while working adjacent or in conjunction with the paper organizer assembly **11**. Use of the mobile support **81** is particularly desirable in those situations where the worker has large numbers of papers displayed and organized on the upper, intermediate and lower shelves, and is using the mobile support **81** and its support tray or worksurface **86** to carry out other tasks, while having convenient visual access to the many papers supported on the organizer assembly **11**.

The mobile support **81** is illustrated and described in detail in my copending U.S.A. provisional application entitled "Office Scooter With Attached Worksurface" as filed concurrently herewith (attorney reference: Haworth PA-004), and the disclosure of this copending provisional application is incorporated herein by reference.

Although a particular preferred embodiment of the invention has been disclosed in detail for illustrative purposes, it will be recognized that variations or modifications of the disclosed apparatus, including the rearrangement of parts, lie within the scope of the present invention.

I claim:

1. A paper organizer for an office or the like, comprising: a generally enlarged and upright support member of vertically stepped cross-section and including an upper L-shaped support shelf which at its lower edge is rigidly joined to an upper edge of an intermediate L-shaped support shelf, and said intermediate L-shaped support shelf at its lower edge being rigidly joined to an upper edge of a lower generally L-shaped support shelf, each L-shaped support shelf including a generally planar upright wall which at its lower edge is joined to a bottom wall which projects transversely outwardly away from a front surface of the respective upright wall, said bottom wall having a width which is a small fraction of the height of the respective upright wall, each shelf being adapted to support papers thereon in a generally upright position so that the papers rest against the respective upright wall with a lower edge of the paper bearing against the respective bottom wall, said bottom wall of at least one of said shelves and the respective upright wall together define an angle of less than 90°.

2. A paper organizer according to claim **1**, including a leg structure affixed to a rear of said upright support member for stably maintaining same in upwardly spaced relation from a floor.

3. A paper organizer according to claim **1**, wherein the lower upright wall projects upwardly at a first slope relative to a horizontal, wherein the intermediate upright wall projects upwardly at a second slope relative to the horizontal which is greater than said first slope, and wherein said upper upright wall projects upwardly at a third slope relative to the horizontal which is greater than said second slope.

4. A paper organizer according to claim **3**, wherein said organizer is horizontally elongated and has a horizontally arcuate configuration so that front faces of said upright walls have a concave horizontal curvature.

5. An organizer according to claim **4**, wherein said horizontally arcuate configuration of said organizer is generated about a vertical axis so that said upper upright wall is generated about a first radius which is greater than a second radius used to generate said intermediate upright wall which in turn is greater than a third radius used to generate the lower upright wall, all of said radii being generated about said vertical axis.

6. An organizer according to claim **1**, wherein said upright walls have smooth front surfaces of a material which permits their use with erasable marking pens.

7. A paper organizer for an office or the like, comprising: a generally enlarged and upright support member of vertically stepped cross-section and including an L-shaped support shelf which at its lower edge is fixedly and non-releasably joined to a lower generally L-shaped support shelf, each L-shaped support shelf including a generally planar upright wall which at its lower edge is joined to a bottom wall which projects transversely outwardly away from a front surface of the respective upright wall, said bottom wall having a width which is a small fraction of the height of the respective upright wall, each shelf being adapted to support papers thereon in a generally upright position so that the papers rest against the respective upright wall with a lower edge of the paper bearing against the respective bottom wall, the lower upright wall projecting upwardly at a first slope relative to a horizontal, and said upper upright wall projecting upwardly at a second slope relative to the horizontal which is greater than said first slope.

8. A paper organizer according to claim **7**, wherein said organizer is horizontally elongated and has a horizontally arcuate configuration so that front faces of said upright walls have a concave horizontal curvature.

9. An organizer according to claim **7**, wherein said upright walls have smooth front surfaces of a material which permits their use with erasable marking pens.

10. A paper organizer according to claim **7**, including a plurality of said upright support members each having a horizontally arcuate configuration so that front faces of the respective upright walls have a concave horizontal curvature, said upright support members together defining a

generally semi-circular arrangement when disposed in a horizontally adjacent end-to-end manner with one another.

11. A paper organizer according to claim **7**, including a leg structure affixed to a rear of said upright support member for stably maintaining same in upwardly spaced relation from a floor.

12. A paper organizer according to claim **7**, wherein the upright wall of the lower L-shaped support shelf is directly joined to a front edge of the bottom wall of said lower L-shaped support shelf.

13. A paper organizer according to claim **7**, wherein the upright wall of the upper L-shaped support shelf has a storage shelf that is joined to an upper edge of said upright wall and projects outwardly from a back surface of said upright wall, said storage shelf being adapted to support objects thereon.

14. A paper organizer according to claim **7**, wherein said lower L-shaped support shelf bottom wall includes a groove disposed therein for storage of marking instruments.

15. A paper organizer according to claim **1**, including a plurality of said upright support members each having a horizontally arcuate configuration so that front faces of the respective upright walls have a concave horizontal curvature, said upright support members together defining a generally semi-circular arrangement when disposed in a horizontally adjacent end-to-end manner with one another.

16. A paper organizer according to claim **1**, wherein said lower L-shaped support shelf bottom wall includes a groove disposed therein for storage of marking instruments.

17. A multi-level paper organizer for an office or the like, comprising:

a generally enlarged and upright support member of vertically stepped cross-section having an upper L-shaped support shelf which at its lower edge is joined to a lower L-shaped support shelf, each L-shaped support shelf including a generally enlarged planar upright wall and a bottom wall which projects outwardly from a lower edge of said respective upright wall, said bottom wall having a front edge, said upper L-shaped support shelf bottom wall front edge being directly and fixedly joined to said lower L-shaped support shelf upright wall, said bottom wall having a width that is a small fraction of the height of the respective upright wall, said lower upright wall projecting upwardly at a first slope relative to a horizontal and said upper upright wall projecting upwardly at a second slope relative to the horizontal which is greater than said first slope, each shelf being adapted to support papers thereon in a generally upright position so that the papers rest against the respective upright wall with a lower edge of the paper bearing against the respective bottom wall.

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